

S.N. 10/004,151

Art Unit 3749

## AMENDMENTS TO THE CLAIMS:

23. (Amended) A calcination plant for a particulate feed material comprising:

a substantially vertical calcination reactor having a bottom portion;

means for effecting transport of the particulate feed material through said calcination reactor along a substantially cyclonic flow path; and

means for creating a heat source within said cyclonic flow path, said effecting means comprising means for introducing the particulate material into said calcination reactor substantially tangentially of said bottom portion, and said cyclonic flow path extending upwards from said bottom portion, said creating means being mounted in said bottom portion.

24. (Amended) The plant of claim 23, wherein said creating means comprises a burner.

25. (Amended) The plant of claim 23, further comprising a storage silo for the particulate feed material, means for fluidizing the particulate feed material prior to storage and for conveying a resulting fluidized feed stream to said storage silo, a first heat

S.N. 10/004,151

Art Unit 3749

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exchanger, a second heat exchanger and a solid-gas separation unit, said effecting means constituting part of means for fluidizing the particulate feed material from said storage silo and for sequentially conveying a resulting fluidized feed stream through said calcination reactor and said solid-gas separation unit to produce a solid calcined product and a gaseous exhaust, said first heat exchanger being located between said gaseous exhaust and a reactor air stream used for fluidizing the particulate feed material conveyed to said calcination reactor, and said second heat exchanger being located between said gaseous exhaust and a feed air stream used for fluidizing the particulate feed material conveyed to said storage silo, said solid-gas separation unit, said first heat exchanger and said second heat exchanger being located in said storage silo and at least partially immersed in the particulate feed material therein.

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